



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,506	10/01/2003	Robert A. DiChiara JR.	038190/262872	8545
826	7590	11/28/2008		
ALSTON & BIRD LLP				
BANK OF AMERICA PLAZA				
101 SOUTH TRYON STREET, SUITE 4000				
CHARLOTTE, NC 28280-4000				
EXAMINER				
SALVATORE, LYNDIA				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
11/28/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/676,506

**Applicant(s)**

DICIARA, ROBERT A.

**Examiner**

LYNDA M. SALVATORE

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,5,7-10,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7-10,26,27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment and accompanying remarks filed 7/31/08 have been fully considered and entered. Claim 1 has been amended as requested. Applicant's amendment is not found patently distinguishable over the prior art made of record and Applicant's arguments are not found persuasive of patentability for reasons set forth herein below.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-5 and 7-10 stands rejected under 35 U.S.C. 103(a) as obvious over Olson et al., US 5, 273,821 in view of De Jager, US 5,439,627.

Applicant argues that that the prior art of Olson et al., teach employing a starch binder and does not teach the claimed density range. These arguments are not found persuasive. The prior art of Olson et al., was solely relied upon to teach the structure of a ceramic fiberboard having the claimed density. It is the position of the Examiner that the recitation of a density of less than 22 lbs/ft<sup>3</sup> meets the limitation of providing a fiberboard having a density ranging between 5 and 24 lbs/ft<sup>3</sup>.

With regard to the binder limitations, Olson was not relied upon to teach the claimed binder. The patent issued to De Jager teaches the claimed water-soluble methylcellulose binder to hold the filaments and/or particles together. Though De Jager may not explicitly prefer employing the claimed methylcellulose binder it would be

improper to ignore the disclosure directed to employing methylcellulose. In other words, though De Jager may only suggest methylcellulose binder in passing, the fact remains that methylcellulose is taught as a suitable binder material.

The patent issued to Olson et al., teach a high strength ceramic fiberboard having a density of less than 22 lbs/ft<sup>3</sup> (abstract). Said fiberboard is used in the formation of high temperature insulation boards (column 1, 9-13).

Olson et al., fails to teach the claimed binder material or the claimed fiber alignment, however, the patent issued to the patent issued to De Jager teaches a composite laminate comprising a mixture of aligned continuous and chopped ceramic filaments (column 1, 19-35, column 2, 50-55, column 3, 10-30, column 5, 25-35). With regard to claim 5, De Jager teaches the claimed type of ceramic fibers (column 5, 10-30). De Jager teaches employing water-soluble methylcellulose binder to hold the filaments and/or particles together (column 5, 55-column 6, 25).

It is the position of the Examiner that it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the water soluble methylcellulose binder of De Jager as the bonding agent in the ceramic sheets of Olson et al. The selection of any of these known equivalents to form a composite structure would be within the level of one of ordinary skill in the art. Specific motivation to employ the water soluble methylcellulose over the binder materials taught by Olson et al., is found in the teaching of De Jager directed to providing a cheap binder which has low melting point and good binding power (column 6, 10-25).

With regard to the limitations pertaining to the reverse thermal gelation properties, although De Jager., does not specifically teach reverse thermal gelation it is reasonable to presume that said property is inherent to the water soluble methylcellulose binder taught by De Jager. Support for said presumption is found in the use of like materials such methylcellulose, which would result in the claimed reverse gelation properties. The burden is shifted to Applicant to prove otherwise.

With regard to claim 10, the combination of prior art fails to teach the claimed binder content, however, De Jager does teach a binder content of 30% by volume in example 1 (column 10, 45-50). It would have been obvious to one having ordinary skill in the art at the time the invention was to optimize the amount of binder as a function of desired bond strength, toughness, and flexibility. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

4. Claims 26 and 27 stands rejected under 35 U.S.C. 103(a) as obvious over Olson et al., US 5, 273,821 in view of De Jager, US 5,439,627 as applied to claim 1 above and further in view of Bompard et al., US 6,585, 842.

The rejection of claim 1 from which claims 26 and 27 depend from is maintained as set forth above. The Examiner maintains that the prior art of Bompard et al., was relied upon to teach that it is known in the art to form multiple layers from sheets of ceramic. Since the prior art teaches forming ceramic sheets, it is the position of the Examiner that based on the combine teachings of the prior art one of ordinary skill in

the art would be motivated to form a multilayer article from the sheets of Olson et al., De Jager as taught by Bompard et al.

The combination of prior art fails to teach providing multiple layers, however, the patent issued to Bompard et al., teach forming a plurality of unidirectional sheets from continuous and discontinuous ceramic or glass filaments (abstract and column 8, 15-30). Bompard et al., teach joining the plurality of sheets together and impregnating with an epoxy resin to form composite materials suitable to use as masts for boats (column 20, 19-25 and 53-58). With regard to claim 26, Bompard et al., teach multi-layer or stacked composites (column 17, 65-column 18, 30). The Examiner considers a multi-layer structure sufficient to meet the limitation of providing two or more layers of ceramic fibers. With regard to claim 27, Bompard et al., teach a plurality of sheets comprising continuous, discontinuous and/or mixtures of hybrid fibers. As such, it is the position of the Examiner that the limitation of a board comprising at least one layer of continuous ceramic fibers and at least one layer of chopped ceramic fibers is encompassed by the teachings of Bompard et al. Said reinforcing plies are used to make composite parts (column 1, 10-20).

Therefore, motivated by the desire to form a multi-layer composite it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the composite taught by the combination of Olson et al., in view of De Jager with multiple layers of the ceramic sheets as taught by Bompard et al.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LYNDIA M. SALVATORE whose telephone number is (571)272-1482. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 23, 2008  
Art Unit 1794

/Lynda Salvatore/  
Primary Examiner